

AMENDMENT TO THE CLAIMS

Claim 1. (Previously Amended): An impregnation process, comprising the steps of:

- a.) providing at least one mobile vessel in which impregnation of a porous article can be carried out, said vessel comprising a chamber for containing a flowable polymerizable impregnating composition and at least one porous article to be impregnated;
- b.) providing a series of stations defining a selection of impregnation sequences, each of said stations to perform at least one specific impregnation step on said at least one porous article within said at least one vessel, wherein said series of stations are selected from the group consisting of an impregnating composition addition station, a vacuum station, a pressure station, a centrifuge station, a reclaiming station, a retrieval station and combinations thereof;
- c.) sequentially directing said at least one vessel to at least one selected station chosen from said series of stations;
- d.) performing said at least one specific impregnation step at said at least one selected station; and

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e.) providing a polymerization step to polymerize said impregnating composition within the pores of said porous article.

Claim 2. (Previously Amended): The impregnation process of claim 1, wherein said vacuum station includes a vacuum step to be performed on said vessel chamber to remove air from at least one porous article.

Claim 3. (Previously Amended): The impregnation process of claim 2, wherein said chamber is returned to ambient pressure to initiate impregnation of said porous article.

Claim 4. (Previously Amended): The impregnation process of claim 3, wherein said pressure station includes a pressurization step to be performed on said at least one porous article to complete said impregnation of said porous article.

Claim 5. (Previously Amended): The impregnation process of claim 1, wherein said reclaiming station includes reclaiming excess flowable impregnating composition from an exterior surface of said at least one porous article.

Claim 6. (Previously Amended): The impregnation process of claim 5, wherein said reclaiming station includes an excess flowable impregnating composition retrieval station where said reclaiming step is performed.

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Claim 7. (Previously Amended): The impregnation process of claim 6, wherein said reclaiming step includes tipping said at least one vessel horizontally so as to pour said excess impregnating composition therefrom.

Claim 8. (Previously Amended): The impregnation process of claim 1, wherein said centrifuge station includes a centrifuge step to be performed on said at least one porous article to expel excess flowable impregnating composition from an exterior surface thereof.

Claim 9. (Currently Amended): An impregnation process, comprising the steps of:

a.) providing at least one mobile vessel containing a flowable polymerizable impregnating composition and at least one porous article to be impregnated;

b.) providing a series of stations defining a selection of impregnation sequences, each of said stations to perform at least one specific impregnation step on said at least one porous article within said at least one vessel, wherein said series of stations are selected from the group consisting of [an impregnating composition addition station,] a vacuum station, a pressure station, a centrifuge station, a reclaiming station, a retrieval station and combinations thereof;

c.) sequentially directing said at least one vessel to at least one selected station chosen from said series of stations;

d.) performing said at least one specific impregnation step at said at least one selected station;

e.) repeating steps c.) and d.) until said at least one porous article is impregnated with said flowable impregnating composition; and

f.) polymerizing said impregnating composition within the pores of said porous article.

Claim 10. (Previously Amended): The impregnation process of claim 9, wherein said polymerizing includes the step of transitioning said flowable impregnating composition from liquid to solid upon infiltrating a porosity of said porous article.

Claim 11. (Previously Amended): The impregnation process of claim 10, further including the step of selecting said flowable polymerizable impregnating composition from the group of curing compositions consisting of anaerobic, heat, moisture, radiation and evaporation curing compositions.

Claim 12. (Previously Amended): The impregnation process of claim 9, further comprising the step of de-aerating

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said flowable polymerizable impregnating composition prior to providing said flowable impregnating composition to said at least one vessel.

Claim 13. (Original): The impregnation process of claim 12, wherein said de-aeration step is executed in an independent de-aeration vessel.

Claim 14. (Previously Amended): The system according to claim 13, wherein said de-aeration vessel retains said flowable polymerizable impregnant composition therein during application of a vacuum thereon to remove air from within said flowable impregnant composition.

Claim 15. (Previously Amended): The impregnation process of claim 9, wherein said reclaiming station includes reclaiming excess flowable polymerizable impregnation composition from an exterior surface of said at least one porous article.

Claim 16. (Previously Amended): The impregnation process of claim 15, wherein said reclaiming station includes an excess flowable polymerizable impregnating composition retrieval station where said reclaiming step is performed.

Claim 17. (Previously Amended): The impregnating process of claim 16, wherein said reclaiming step includes

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tipping said at least one vessel horizontally so as to pour said excess flowable polymerizable impregnating composition therefrom.

Claim 18. (Previously Amended): A system for impregnating porous articles comprising:

(a) a series of stations defining a selection of impregnated sequences wherein each of said stations performs at least one specific impregnation step for impregnating one or more porous articles, wherein said series of stations are selected from the group consisting of an impregnating composition addition station, a vacuum station, a pressure station, a centrifuge station, a reclaiming station, a retrieval station and combinations thereof;

(b) at least one mobile vessel for retaining a flowable polymerizable impregnating composition and said one or more porous articles to be impregnated, for transporting said composition and said at least one article to said series of stations and for providing a closed environment for conducting said impregnation steps;

(c) means for directing said vessel sequentially to said series of stations; and

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(d) means for polymerizing said impregnating composition within the pores of said porous article.

Claim 19. (Previously Amended): The system according to claim 18, wherein said vacuum station includes a vacuum step to be performed on said at least one porous article to remove air from porosity thereof.

Claim 20. (Original): The system according to claim 19, wherein said at least one mobile vessel sustains a vacuum applied thereon.

Claim 21. (Previously Amended): The system according to claim 20, wherein said pressure station includes a pressurization step to be performed on said at least one porous article to complete said impregnation of said porous article.

Claim 22. (Original): The system according to claim 21, wherein said at least one mobile vessel sustains a pressurization step applied thereon.

Claim 23. (Previously Amended): The system according to claim 19, wherein said retrieval station reclaims an excess of flowable impregnating composition after impregnation of said porous articles.

Claim 24. (Previously Amended): The system according to claim 19, wherein said centrifuge station includes centrifuge

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for expelling said excess flowable impregnating composition from an exterior surface of said at least one porous article.

Claim 25. (Cancelled)

Claim 26. (Cancelled)

Claim 27. (Original): The system according to claim 18, further comprising means for de-aerating said flowable impregnating composition.

Claim 28. (Original): The system according to claim 27, wherein said de-aerating means includes an independent de-aeration vessel.

Claim 29. (Original): The system according to claim 28, wherein said de-aeration vessel retains said flowable impregnant composition therein during application of a vacuum thereon to remove dissolved air from within said flowable impregnant composition.

Claim 30. (Original): The system according to claim 18, wherein each of said stations comprises a plurality of processing positions for accommodating multiple vessels simultaneously.

Claim 31. (Original): The system according to claim 18, wherein said directing means includes a hoist, conveyor, rails, robot, human operator, forklift or other means for

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transporting said at least one mobile vessel to each of said stations.

Claim 32. (Original): The system according to claim 18, wherein said directing means includes a programmable logic controller, PC based controller or other means of executing machine logic.

Claim 33. (Previously Amended): A system for impregnating porous articles, comprising:

a series of stations defining a selection of impregnation sequences wherein each of said stations performs at least one specific impregnation step for impregnating one or more porous articles;

at least one mobile vessel for retaining a flowable impregnating composition and said one or more porous articles to be impregnated, wherein said flowable impregnating composition is an anaerobic sealant composition which requires de-aeration prior to use; said vessel being adapted to transport said composition and said at least one porous article to said series of stations; and being adapted to provide a closed environment for conducting said impregnation step;

means for directing said vessel sequentially to said series of stations; and

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means for de-aerating said flowable impregnating composition.

Claim 34. (Original): The system according to claim 33, wherein said de-aerating means includes a de-aeration vessel independent of a flowable impregnant storage tank and process vessel.

Claim 35. (Original): The system according to claim 34, wherein said de-aeration vessel retains said flowable impregnant composition therein during application of a vacuum thereon to remove dissolved air from within said flowable impregnant composition.

Claim 36-41. (Cancelled)